OM protein - protein search, using sw model

GenCore version 5.1.4_p5_4578
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Run on:                  March 14, 2003, 09:22:34 ; Search time 24.9038 seconds
                         (without alignments)
                         2108.144 Million cell updates/sec

Title:          US-09-836-077-4
Perfect score:  2120
Sequence:       1 MTPPPGRAAPSAPRARVLS.........TFQVADSHPEVAQRVEPMGP 394

Scoring table:  BLOSUM62
                Gapop 10.0 , Gapext 0.5

Searched:       908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters:    908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :      A_Geneseq_101002:*
                1:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
                2:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
                3:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
                4:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
                5:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1984.DAT:*
                6:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*
                7:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1986.DAT:*
                8:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1987.DAT:*
                9:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
                10:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
                11:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*
                12:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:*
                13:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1992.DAT:*
                14:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*
                15:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1994.DAT:*
                16:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1995.DAT:*
                17:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1996.DAT:*
                18:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*
                19:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1998.DAT:*
                20:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1999.DAT:*
                21:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA2000.DAT:*
                22:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
                23:/SIDS1/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

SUMMARIES

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

| Result NO. | Score | % Query Match | Length | Match | DB | ID | Description |
|---|---|---|---|---|---|---|---|
| 1 | 2120 | 100.0 | 394 | 20 | AAW92805 | EP-892047 Seq ID 4 |
| 2 | 2115 | 99.8 | 664 | 21 | AAY82434 | Mouse CDw108 prote |
| 3 | 1897 | 89.5 | 666 | 20 | AAY99445 | Human semaphorin 2 |
| 4 | 1897 | 89.5 | 666 | 20 | AAB28052 | SBSEMVL polypeptid |
| 5 | 1897 | 89.5 | 666 | 20 | AAW92804 | EP-892047 Seq ID 3 |
| 6 | 1897 | 89.5 | 666 | 21 | AAY82433 | Human CDw108 prote |
| 7 | 1897 | 89.5 | 666 | 21 | AAY55009 | Human semaphorin, |
| 8 | 1897 | 89.5 | 666 | 22 | AAE02650 | Human Sema7A prote |
| 9 | 1755 | 82.8 | 634 | 21 | AAY56854 | Human semaphorin K |
| 10 | 948.5 | 44.7 | 215 | 20 | AAY28853 | SBSEMVL polypeptid |

ALIGNMENTS

RESULT 1
AAW92805
ID   AAW92805 standard; Protein; 394 AA.
XX
AC   AAW92805;
XX
DT   07-MAY-1999  (first entry)
XX
DE   EP-892047 Seq ID 4.
XX
KW   Semaphorin L; human; immunosuppressant; anti-inflammatory; gene therapy;
KW   organ transplantation; inflammation therapy; immunotherapy; agonist;
KW   immunomodulatory; antagonist.
OS   Homo sapiens.
XX
PN   EP892047-A2.
XX
PD   20-JAN-1999.
XX
PF   06-JUL-1998;  98EP-0112470.
XX
PR   11-FEB-1998;  98DE-1005371.
PR   09-JUL-1997;  97DE-1029211.
XX
PA   (HMRI ) HOECHST MARION ROUSSEL DEUT GMBH.
XX
PI   Ensser A, Fleckenstein B;
DR   WPI; 1999-083564/08.
XX
PT   New semaphorin L proteins - used as immunosuppressants and
PT   antiinflammatory agents in organ transplants, inflammation therapy,

| | | | | | |
|---|---|---|---|---|---|
| 11 | 902 | 42.5 | 21 | AAY56855 | Semaphorin K1 poly |
| 12 | 552 | 26.0 | 22 | AAB93440 | Human protein sequ |
| 13 | 397 | 18.7 | 23 | ABB97964 | Human protein sequ |
| 14 | 389.5 | 18.4 | 18 | AAW17658 | Mouse CD100 antige |
| 15 | 389.5 | 18.4 | 19 | AAW58540 | Human semaphorin. |
| 16 | 389.5 | 18.4 | 22 | AAB81035 | Murine CD100 amino |
| 17 | 389.5 | 18.4 | 22 | AAB51251 | Mouse CD100 protei |
| 18 | 385.5 | 18.2 | 22 | AAE03818 | Human gene 1 encod |
| 19 | 385.5 | 18.2 | 23 | ABG64522 | Human albumin fusi |
| 20 | 385.5 | 18.2 | 21 | AAU29250 | Human PRO1480 (UNQ |
| 21 | 385.5 | 18.2 | 21 | AAB66159 | Protein of the inv |
| 22 | 376.5 | 17.8 | 23 | AAU77413 | Human NOV7 protein |
| 23 | 368 | 17.4 | 22 | AAB62727 | Amino acid sequenc |
| 24 | 366 | 17.3 | 19 | AAY21264 | Human semaphorin I |
| 25 | 363 | 17.1 | 16 | AAR71180 | Amino acid sequenc |
| 26 | 361.5 | 17.1 | 22 | AAG62726 | Human semaphorin. |
| 27 | 361.5 | 17.1 | 18 | AAW17657 | Human CD100 antige |
| 28 | 361.5 | 17.1 | 22 | AAB81036 | Murine CD100 amino |
| 29 | 361.5 | 17.1 | 22 | AAB51252 | Human CD100 protei |
| 30 | 346 | 16.3 | 20 | AAY13463 | Ectromelia A39R se |
| 31 | 346 | 16.3 | 21 | AAB28523 | Ectromelia A39R se |
| 32 | 346 | 16.3 | 22 | AAB70132 | Ectromelia A39R se |
| 33 | 346 | 16.3 | 22 | AAB31694 | Amino acid sequenc |
| 34 | 342.5 | 16.2 | 16 | AAW63748 | Vaccinia virus sem |
| 35 | 341.5 | 16.1 | 16 | AAR71381 | Human protein sequ |
| 36 | 341 | 16.1 | 23 | ABB97963 | Human protein sequ |
| 37 | 339.5 | 16.0 | 22 | AAB48374 | Human SEC11 protei |
| 38 | 339.5 | 16.0 | 22 | AAB48373 | Human SEC6 protein |
| 39 | 339.5 | 16.0 | 22 | AAB48378 | Human SEC7 protein |
| 40 | 337.5 | 15.9 | 22 | AAE03640 | Human extracellula |
| 41 | 334.5 | 15.8 | 23 | AAE18214 | Human MOL5b protei |
| 42 | 334.5 | 15.8 | 23 | AAE18215 | Human MOL5c protei |
| 43 | 333.5 | 15.7 | 23 | AAE18213 | Human MOL5a protei |
| 44 | 332.5 | 15.7 | 20 | AAY43090 | Mouse semaphorin H |

```
PT  immunotherapy and gene therapy
XX
PS  Claim 4; Page 64-65; 135pp; German.
XX
PT  This invention describes a novel human semaphorin L protein. This protein
CC  or its encoding DNA are useful as immunosuppressants and/or
CC  anti-inflammatory agents in organ transplantation, inflammation therapy,
CC  immunotherapy and gene therapy. The DNA can be used to produce knock-out
CC  or knock-in animals for research purposes. The proteins or DNA can be
CC  used to search for the corresponding receptors or to screen for
CC  immunomodulatory agonists or antagonists.
XX
SQ  Sequence  394 AA;
XX

Query Match      100.0%;  Score 2120;  DB 20;  Length 394;
Best Local Similarity   100.0%;  Pred. No. 5.7e-204;
Matches 394;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    1  MTPPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAAASAQGHSRSGPRISAVWKG   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  MTPPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAAASAQGHSRSGPRISAVWKG   60

Qy   61  QDHVDFSQPEPHTVLFHEPGSFSVWVGGRGKVYHFNFPEGKNASVRTVNIGSTKGSCQDK  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  QDHVDFSQPEPHTVLFHEPGSFSVWVGGRGKVYHFNFPEGKNASVRTVNIGSTKGSCQDK  120

Qy  121  QDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSLVLF  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  QDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSLVLF  180

Qy  181  EGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDKIYY  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  EGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDKIYY  240

Qy  241  FFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRNFNR  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  FFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRNFNR  300

Qy  301  LQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLSNPR  360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  LQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLSNPR  360

Qy  361  PGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP  394
         ||||||||||||||||||||||||||||||||||
Db  361  PGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP  394
```

```
RESULT 2
AAY82434
ID   AAY82434 standard; Protein; 664 AA.
XX
AC   AAY82434;
XX
DT   27-JUN-2000  (first entry)
XX
DE   Mouse; CDw108 protein SEQ ID NO:8.
XX
KW   Mouse; CDw108; detection; diagnosis; HIV; infection; anti-HIV.
XX
OS   Mus musculus.
XX
PN   WO200012700-A1.
XX
PD   09-MAR-2000.
PF   25-AUG-1999;   99WO-JP04571.
PR   26-AUG-1998;   98JP-0239687.
XX
PA   (SHIO ) SHIONOGI & CO LTD.
XX
PI   Yamada A, Kubo K, Itoh K;
XX
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```
DR   WPI; 2000-246752/21.
DR   N-PSDB; AAA08189.
XX
PT   New CDw108 protein, useful in diagnosis of and as remedy for
PT   CDw108-associated diseases e.g. HIV-1 infection, and in study of
PT   biological functions and molecular specificity of CDw108 -
XX
PS   Example 8; Page 64-69; 73pp; Japanese.
XX
PT   The present invention describes human CDw108. The CDw109 nucleotide
CC   and protein sequences can be used in the diagnosis and treatment of
CC   CDw108-associated diseases e.g. HIV-1 infection, and in study of
CC   biological functions and molecular specificity of CDw108. The present
CC   sequence represents mouse CDw108 given in an example from the present
CC   invention.
XX
SQ   Sequence  664 AA;
XX

Query Match      99.8%;  Score 2115;  DB 21;  Length 664;
Best Local Similarity   99.7%;  Pred. No. 4.2e-203;
Matches 393;  Conservative   0;  Mismatches   1;  Indels   0;  Gaps   0;

Qy    1  MTPPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAAASAQGHSRSGPRISAVWKG   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  MTPPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAAASAQGHSRSGPRISAVWKG   60

Qy   61  QDHVDFSQPEPHTVLFHEPGSFSVWVGGRGKVYHFNFPEGKNASVRTVNIGSTKGSCQDK  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  QDHVDFSQPEPHTVLFHEPGSFSVWVGGRGKVYHFNFPEGKNASVRTVNIGSTKGSCQDK  120

Qy  121  QDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSLVLF  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  QDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSLVLF  180

Qy  181  EGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDKIYY  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  EGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDKIYY  240

Qy  241  FFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRNFNR  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  FFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRNFNR  300

Qy  301  LQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLSNPR  360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  LQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLSNPR  360

Qy  361  PGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP  394
         ||||||||||||||||||||||||||||||||||
Db  361  PGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP  394
```

```
RESULT 3
AAY39445
ID   AAY39445 standard; Protein; 666 AA.
XX
AC   AAY39445;
XX
DT   01-DEC-1999  (first entry)
XX
DE   Human semaphorin ZSMF-7.
XX
OS   Homo sapiens.
XX
KW   Semaphorin; transmembrane; secreted; neuroregeneration;
KW   immunosuppression; diabetes; multiple sclerosis; rheumatoid arthritis;
KW   proliferation; differentiation.
XX
FH   Key          Location/Qualifiers
FT   Domain       561..620
FT                /note= "Ig-like domain"
XX
PN   WO9945114-A2.
XX
```

```
Query Match      99.8%;  Score ...;  Length 666;

Qy    1  MTPPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAAASAQGHSRSGPRISAVWKG   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  MTPPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAAASAQGHSRSGPRISAVWKG   60

Qy   61  QDHVDFSQPEPHTVLFHEPGSFSVWVGGRGKVYHFNFPEGKNASVRTVNIGSTKGSCQDK  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  QDHVDFSQPEPHTVLFHEPGSFSVWVGGRGKVYHFNFPEGKNASVRTVNIGSTKGSCQDK  120

Qy  121  QDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSLVLF  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  QDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSLVLF  180

Qy  181  EGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDKIYY  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  EGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDKIYY  240

Qy  241  FFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRNFNR  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  FFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRNFNR  300

Qy  301  LQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLSNPR  360
         || ||||||||||||||||||||||||||||||||||||||||||||||||||||| |||
Db  301  LQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLPNPR  360

Qy  361  PGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP  394
         ||||||||||||||||||||||||||||||||||
Db  361  PGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP  394
```

PD    10-SEP-1999.
XX
PF    03-MAR-1999;    99WO-US04758.
XX
PR    03-MAR-1998;    98US-0076611.
XX
PA    (ZYMO ) ZYMOGENETICS INC.
XX
PI    Holloway JL, Lofton-Day CE;
XX
PN    WPI; 1999-540845/45.
DR    N-PSDB; AA220985, AA220986.
XX
PT    New isolated human semaphorin ZSMF-7 polypeptides, used to develop
PT    products for treating e.g. immunodeficiencies, autoimmune diseases,
PT    inflammation, graft rejection and infective diseases -
XX
PS    Claim 6; Page 101-102; 124pp; English.
XX
CC    This sequence represents human ZSMF-7 semaphorin. The cDNA was
CC    isolated and amplified from a human testis cDNA library using PCR
CC    primers ZC16189 (AA220989) and ZC16188 (AA220990) which had been
CC    designed based upon an incomplete clone obtained from a human placenta
CC    library. Semaphorins have a variety of roles. They influence the
CC    direction and degree of axon and dendrite growth in nervous tissue, and
CC    may thus be useful as therapeutic agents for various neurodegenerative
CC    conditions. They are active in defining and directing development of
CC    various tissues and organs including those associated with muscle,
CC    fibroblasts, reproductive, endocrine and lymphatic tissues. ZSMF-7 plays
CC    a role as a mediator of immunosuppression, in particularly the activation
CC    and regulation of T lymphocytes. ZSMF-7 polypeptides would be useful
CC    additions to therapies for treating immunodeficiencies. ZSMF-7 is
CC    expressed in activated lymphocytes (MRL cells) and not in resting
CC    lymphocyte cells (CD4+ and CD8+) suggesting that it would be a useful
CC    tool for diagnosis and treatment of conditions where selective
CC    elimination of inappropriately activated T cells would be beneficial,
CC    such as in autoimmune diseases, in particular insulin dependent
CC    diabetes mellitus, rheumatoid arthritis and multiple sclerosis. ZSMF-7
CC    polypeptides can be used in vivo as anti-inflammatory agents,
CC    for inhibition of antigen in humoral and cellular immunity and for
CC    immunosuppression in graft and organ transplants.
XX
SQ    Sequence    666 AA;

Query Match         89.5%;    Score 1897;  DB 20;   Length 666;
Best Local Similarity    90.2%;    Pred. No. 3.3e-181;
Matches 358;    Conservative    8;  Mismatches  27;   Indels  4;    Gaps  2;

Qy      1  MTPPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAASAQGHSRSGPRISAVWK-  59
           ||||||||||||||||||||||||||||||||||||:|||||||||||||||||||| ||
Db      1  MTPPPPGRAAPSAPRARVPGPPARLGLPLRLRLLLLWAAAASAQGHLRSGPRIFAVWKG  60

Qy     60  --GQDHVDFSQPEPHTVLFHEPEGSFSVWVGGRGKVYHFNFPEGKNASVRTVNIGSTKGSC  117
             ||:|||||||||||||||||||||||:|||||||||||||||||||||||||||||||
Db     61  HVGQDRVDFGQTEPHTVLFHEPEGSSSVWVGGRGKVYLFDFPEGKNASVRTVNIGSTKGSC  120

Qy    118  QDKQDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSL  177
           |||||||||||||||||||||||||||:|||||||||||||||||||||||||||||||
Db    121  LDKRDCENYITLLERRSEGLLACGTNARHPSCWNLVNGTVV-PLGEMRGYAPFSPDENSL  179

Qy    178  VLFEGDEVYSTIRKQEYNGKIPRFRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK  237
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    180  VLFEGDEVYSTIRKQEYNGKIPRFRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK  239

Qy    238  IYYFFREDNDPKNPEAPLNVSRVAQLCRGDQGGESSLSVSKKNTFLKAMLVCSDAAINRN  297
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    240  IYYFFREDNDPKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNKN  299

Qy    298  FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLS  357
           ||||||||||||||||||||||||||||||||||||||||||||||||||||:|||||
Db    300  FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDKVFRTSSLKGYHSSLP  359

Qy    358  NPRPGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP  394
           |||||  |||  :||||||||||||||||||||||||
Db    360  NPRPGKCLPDQQPIPTETFQVADRHPEVAQRVEPMGP  396

---

Db    360  NPRPGKCLPDQQPIPTETFQVADRHPEVAQRVEPMGP  396

RESULT 4
AAY28552
ID    AAY28552 standard; Peptide; 666 AA.
XX
AC    AAY28552;
XX
DT    19-OCT-1999  (first entry)
XX
DE    SBSEMVL polypeptide #1.
XX
KW    SBSEMVL; semaphorin; axon outgrowth; multidrug resistance; spinal injury;
KW    neurodegeneration; viral infection; cancer.
XX
OS    Homo sapiens.
XX
PN    WO9938885-A2.
XX
PD    05-AUG-1999.
XX
PF    25-JAN-1999;  99WO-EP00422.
XX
PR    30-JAN-1998;  98EP-0300694.
XX
PA    (SMIK ) SMITHKLINE BEECHAM PLC.
XX
PI    Hayes PD, Michalovich D;
XX
DR    WPI; 1999-479166/40.
DR    N-PSDB; AA200102.
XX
PT    Novel SBSEMVL molecules used for treating neurodegeneration, spinal
PT    injury, neuropathies, and neuromuscular, psychiatric, and
PT    inflammatory disorders, developmental malfunctions, cancer, immune
PT    system disorders and viral infections
XX
PS    Claim 4; Page 29-31; 34pp; English.
XX
CC    This sequence is human SBSEMVL polypeptide #1. SBSEMVL polypeptides are
CC    believed to be members of the Semaphorin family of polypeptides.
CC    Semaphorin polypeptides act as recognition molecules and are involved in
CC    axon outgrowth control. They are also likely to have a role in immune
CC    function and multidrug resistance. SBSEMVL polypeptides may be used for
CC    detecting diseases associated with inappropriate SBSEMVL activity or
CC    levels. SBSEMVL polypeptides and polynucleotides, agonists, antagonists
CC    and antibodies are used to treat neurodegeneration, spinal injury,
CC    neuropathies, and neuromuscular, psychiatric, and inflammatory disorders,
CC    developmental malfunctions, cancer, disorders of the immune system and
CC    viral infection. The polynucleotide is also useful as a source of primers
CC    and probes, and also for detecting the above diseases.
XX
SQ    Sequence    666 AA;

Query Match         89.5%;    Score 1897;  DB 20;   Length 666;
Best Local Similarity    90.2%;    Pred. No. 3.3e-181;
Matches 358;    Conservative    8;  Mismatches  27;   Indels  4;    Gaps  2;

Qy      1  MTPPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAASAQGHSRSGPRISAVWK-  59
           ||||||||||||||||||||||||||||||||||||:|||||||||||||||||||| ||
Db      1  MTPPPPGRAAPSAPRARVPGPPARLGLPLRLRLLLLWAAAASAQGHLRSGPRIFAVWKG  60

Qy     60  --GQDHVDFSQPEPHTVLFHEPEGSFSVWVGGRGKVYHFNFPEGKNASVRTVNIGSTKGSC  117
             ||:|||||||||||||||||||||||:|||||||||||||||||||||||||||||||
Db     61  HVGQDRVDFGQTEPHTVLFHEPEGSSSVWVGGRGKVYLFDFPEGKNASVRTVNIGSTKGSC  120

Qy    118  QDKQDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSL  177
           |||||||||||||||||||||||||||:|||||||||||||||||||||||||||||||
Db    121  LDKRDCENYITLLERRSEGLLACGTNARHPSCWNLVNGTVV-PLGEMRGYAPFSPDENSL  179

Qy    178  VLFEGDEVYSTIRKQEYNGKIPRFRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK  237

```
Db  180 VLFEGDEVYSTIRKQEYNGKIIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy  238 IYYFFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRN 297
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||:|
Db  240 IYYFFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNKN 299

Qy  298 FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYIHMGLS 357
        ||||||||||||||||||||||||||||||||||||||||||:|||||||||||
Db  300 FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDKVFRTSSLKGYHSSLP 359

Qy  358 NPRPGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP 394
        |||||:||||:||||||||||||:|||||||||||||
Db  360 NPRPGKCLPDQQPIPTETFQVADRHPEVAQRVEPMGP 396
```

RESULT 5
```
ID   AAW92804 standard; Protein; 666 AA.
XX
AC   AAW92804;
XX
DT   07-MAY-1999 (first entry)
XX
DE   EP-892047 Seq ID 3.
XX
OS   Homo sapiens.
XX
KW   Semaphorin L; human; immunosuppressant; anti-inflammatory; gene therapy;
KW   organ transplantation; inflammation therapy; immunotherapy; agonist;
KW   immunomodulatory; antagonist.
XX
PN   EP892047-A2.
XX
PD   20-JAN-1999.
XX
PF   06-JUL-1998; 98EP-0112470.
XX
PR   09-JUL-1997; 97DE-1029211.
PR   11-FEB-1998; 98DE-1005371.
XX
PA   (HMRI ) HOECHST MARION ROUSSEL DEUT GMBH.
XX
PI   Ensser A, Fleckenstein B;
XX
DR   WPI: 1999-083564/08.
XX
PT   New Semaphorin L proteins - used as immunosuppressants and
PT   antiinflammatory agents in organ transplants, inflammation therapy,
PT   immunotherapy and gene therapy.
XX
PS   Claim 2; Page 61-64; 135pp; German.
XX
CC   This invention describes a novel human semaphorin L protein. This protein
CC   or its encoding DNA are useful as immunosuppressants and/or
CC   anti-inflammatory agents in organ transplantation, inflammation therapy,
CC   immunotherapy and gene therapy. The DNA can be used to produce knock-out
CC   or knock-in animals for research purposes. The proteins or DNA can be
CC   used to search for the corresponding receptors or to screen for
CC   immunomodulatory agonists or antagonists.
XX
SQ   Sequence 666 AA;
```

Query Match   89.58%;  Score 1897;  DB 20;  Length 666;
Best Local Similarity  90.2%;
Matches  358;  Conservative  8;  Mismatches  27;  Indels  4;  Gaps  2;

```
Qy   1 MTPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAASAQGHSRSGPRISAVWK- 59
        ||||||||||||||||||   |||||||||||||||:||||||||| ||||||:||||
Db   1 MTPPPGRAAPSAPRARVGPPARLGLPLRLRLLLLWAAAASAQGHLRSGPRIFAVWKG 60

Qy  60 -GQDHVDPEFSQPEPHTVLFHEPEGSFSVWWGGRGKVYHFNPFEGKNASVRTVNIGSTKGSC 117
        || |||| |:|:|| | ||||||||||||||||||| || ||||||||||||||||||||
Db   1 MTPPPGRAAPSAPRARVGPPARLGLPLRLRLLLLWAAAASAQGHLRSGPRIFAVWKG 60
```

```
Db  61 HVGQDRVDFGQTEPHTVLFHEPSGSSSVWWGGRGKVYYLFDFPEGKNASVRTVNIGSTKGSC 120
        |||||| |||||||||||||||||:|||||||||||| | ||||||||||||||||||||||
Qy 118 QDKQDCGNYITLLERGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSL 177
        ||:||||||||||||||:||||||||| ||||||||:||| ||||||::||||||||||
Db 121 LDKRDCENYITLLERRSEGLLACGTNARHPSCWNLVNGTVV-PLGEMRGYAPFSPDENSL 179

Qy 178 VLFEGDEVYSTIRKQEYNGKIIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK 237
        ||||||||||||||||||||| |||||||||||||||||||||||||||||||||||||||
Db 180 VLFEGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK 239

Qy 238 IYYFFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRN 297
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||:|
Db 240 IYYFFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNKN 299

Qy 298 FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYIHMGLS 357
        ||||||||||||||||||||||||||||||||||||||||||:|||||||||||
Db 300 FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDKVFRTSSLKGYHSSLP 359

Qy 358 NPRPGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP 394
        |||||:||||:||||||||||||:|||||||||||||
Db 360 NPRPGKCLPDQQPIPTETFQVADRHPEVAQRVEPMGP 396
```

RESULT 6
```
ID   AAY82433 standard; Protein; 666 AA.
XX
AC   AAY82433;
XX
DT   27-JUN-2000 (first entry)
XX
DE   Human CDw108 protein SEQ ID NO:1.
XX
OS   Homo sapiens.
XX
KW   Human; CDw108; detection; diagnosis; HIV; infection; anti-HIV.
XX
PN   WO200012700-A1.
XX
PD   09-MAR-2000.
XX
PF   25-AUG-1999; 99WO-JP04571.
XX
PR   26-AUG-1998; 98JP-0239687.
XX
PA   (SHIO ) SHIONOGI & CO LTD.
XX
PI   Yamada A, Kubo K, Itoh K;
XX
DR   WPI: 2000-246752/21.
DR   N-PSDB: AAA08183.
XX
PT   New CDw108 protein, useful in diagnosis of and as remedy for
PT   CDw108-associated diseases e.g. HIV-1 infection, and in study of
PT   biological functions and molecular specificity of CDw108 -
XX
PS   Claim 1; Fig 1; 73pp; Japanese.
XX
CC   The present sequence represents human CDw108. The CDw109 nucleotide
CC   and protein sequences can be used in the diagnosis and treatment of
CC   CDw108-associated diseases e.g. HIV-1 infection, and in study of
CC   biological functions and molecular specificity of CDw108.
XX
SQ   Sequence 666 AA;
```

Query Match   89.58%;  Score 1897;  DB 21;  Length 666;
Best Local Similarity  90.2%;
Matches  358;  Conservative  8;  Mismatches  27;  Indels  4;  Gaps  2;

```
Qy   1 MTPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAASAQGHSRSGPRISAVWK- 59
        |||||||||||||||||   |||||||||||||||:||||||||| ||||||:||||
Db   1 MTPPPGRAAPSAPRARVGPPARLGLPLRLRLLLLWAAAASAQGHLRSGPRIFAVWKG 60
```

```
Qy    60  --GQDHVDFSQPEPHTVLFHEPGSFSVWWGRGKVYHFNFPEGKNASVRTVNIGSTKGSC 117
          |:||| ||||||||||||||||:|:|||| |||||||||||||||||||||||||||||
Db    61  HVGQDRVDFGQTEPHTVLFHEPGSSSVWWGGRGKVYLFDFPEGKNASVRTVNIGSTKGSC 120

Qy   118  QDKQDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSL 177
          :||| |||:|||||||||||||||||||||    ||||||:|| ::|||||||||||||
Db   121  LDKRDCENYITLLERRSEGLLACGTNARHPSCWNLVNGTVV-PLGEMRGYAPFSPDENSL 179

Qy   178  VLFEGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK 237
          ||||| |||||||||| ||||||||||||||||||||:|||||||||||||||||||||
Db   180  VLFEGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK 239

Qy   238  IYYFFREDNPDKNPEAPLNVSRVAQLCRGDQOGGESSLSVSKWNTFLKAMLVCSDAATNRN 297
          ||||||||||||||||||||||||||||||||||||||||||||||||||||:|
Db   240  IYYFFREDNPDKNPEAPLNVSRVAQLCRGDQOGGESSLSVSKWNTFLKAMLVCSDAATNKN 299

Qy   298  FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLS 357
          ||||||||||||||||||||||||||||||||||||||||||| |
Db   300  FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDKVFRTSSLKGYHSSLP 359

Qy   358  NPRPGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP 394
          ||||| || |||||||||:||||  |||||| |||
Db   360  NPRPGKCLPDQQOPIPTETFQVADRHPEVAQRVEPMGP 396
```

RESULT 7
AAY55009
ID   AAY55009 standard; Protein; 666 AA.
XX
AC   AAY55009;
XX
DT   18-FEB-2000   (first entry)
XX
DE   Human semaphorin, DCSema, protein sequence.
XX
KW   Semaphorin; DCSema; human; inflammatory disease; VESPR; interleukin-12;
KW   IL-12; immune response; aggressive micrometastasing tumour; therapy;
KW   immune suppression; autoimmune disorder; semaphorin receptor;
KW   immune regulation; viral infection.
OS   Homo sapiens.
XX
PN   WO9958676-A2.
XX
PD   18-NOV-1999.
XX
PF   05-MAY-1999; 99WO-US09831.
XX
PR   14-MAY-1998; 98US-0085497.
XX
PA   (IMMV ) IMMUNEX CORP.
PI   Spriggs MK;
XX
DR   WPI; 2000-053100/04.
DR   N-PSDB; AAZ40163.
XX
PT   Novel neurological regulator polypeptide for treating inflammatory
PT   diseases, autoimmune disorders, etc.,  -
XX
PS   Claim 1; Page 34-36; 41pp; English.
XX
CC   This sequence is the human semaphorin protein, designated DCSema, of
CC   the invention. DCSema is used for treating inflammatory diseases. DCSema
CC   ligands bind with VESPR to enhance or promote interleukin-12 (IL-12)
CC   production which induces an immune response against aggressive
CC   micrometastasing tumours. They are associated with immune suppression
CC   of mature dendritic cells and therefore can be used for treating
CC   autoimmune disorders. They can be employed to measure biological activity
CC   of any semaphorin receptor in terms of its binding affinity for
CC   semaphorin ligand and also for detecting semaphorin receptor by in vitro
CC   assays. DCSema polypeptides are used as reagents in quality assurance
CC   studies (to monitor shelf life and stability of semaphorin receptor under

CC   different conditions). They are also used as a research tool for studying
CC   the role of this ligand and its receptor in immune regulation and are
CC   also used as carriers for delivering diagnostic or therapeutic agents to
CC   cells expressing semaphorin receptor. They are shown to play a role as
CC   immune regulators in viral infection.
XX
SQ   Sequence   666 AA;

Query Match      89.5%;  Score 1897;  DB 21;  Length 666;
Best Local Similarity   90.2%;
Matches  358;  Conservative   8;  Mismatches  27;  Indels  4;  Gaps  2;

```
Qy     1  MTPPPGRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAAASAQGHSRSGPRISAVWK-  59
          |||||||||||||||| :| |||| |||||||||| :||||||||||: ||||| ||||
Db     1  MTPPPGRAAPSAPRARVPGPPARLGLPLRLRLLLLWAAAASAQGHLRSGPRIFAVWKG   60

Qy    60  --GQDHVDFSQPEPHTVLFHEPGSFSVWWGRGKVYHFNFPEGKNASVRTVNIGSTKGSC 117
          |:|||  ||||||||||||||||:|:|||| |||||||||||||||||||||||||||||
Db    61  HVGQDRVDFGQTEPHTVLFHEPGSSSVWWGGRGKVYLFDFPEGKNASVRTVNIGSTKGSC 120

Qy   118  QDKQDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSL 177
          :||| |||:|||||||||||||||||||||    ||||||:|| ::|||||||||||||
Db   121  LDKRDCENYITLLERRSEGLLACGTNARHPSCWNLVNGTVV-PLGEMRGYAPFSPDENSL 179

Qy   178  VLFEGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK 237
          ||||| |||||||||| |||||||||||||||||||:|||||||||||||||||||||
Db   180  VLFEGDEVYSTIRKQEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVHQDQAYDDK 239

Qy   238  IYYFFREDNPDKNPEAPLNVSRVAQLCRGDQOGGESSLSVSKWNTFLKAMLVCSDAATNRN 297
          ||||||||||||||||||||||||||||||||||||||||||||||||||||:|
Db   240  IYYFFREDNPDKNPEAPLNVSRVAQLCRGDQOGGESSLSVSKWNTFLKAMLVCSDAATNKN 299

Qy   298  FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLS 357
          ||||||||||||||||||||||||||||||||||||||||||| |
Db   300  FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDKVFRTSSLKGYHSSLP 359

Qy   358  NPRPGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP 394
          ||||| || |||||||||:||||  |||||| |||
Db   360  NPRPGKCLPDQQOPIPTETFQVADRHPEVAQRVEPMGP 396
```

RESULT 8
AAE02650
ID   AAE02650 standard; Protein; 666 AA.
XX
AC   AAE02650;
XX
DT   10-AUG-2001   (first entry)
XX
DE   Human Sema7A protein.
XX
KW   Human; Sema7A; semaphorin family; chromosome 15q22.3-q23; stroke;
KW   autoimmune disorder; COPD; chronic obstructive pulmonary disease;
KW   psoriasis; tissue repair; wound healing; irritable bowel syndrome;
KW   inflammation; cancer; atherosclerosis; dendritic cell.
OS   Homo sapiens.
XX
PN   WO20013979-A2.
XX
PD   07-JUN-2001.
XX
PF   28-NOV-2000; 2000WO-EP11873.
XX
PR   30-NOV-1999; 99GB-0028329.
PR   14-SEP-2000; 2000GB-0022572.
XX
PA   (SMIK ) SMITHKLINE BEECHAM PLC.
PI   Holmes SD, Lewis CJ;
XX
DR   WPI; 2001-374667/39.
DR   N-PSDB; AAD06126.

```
XX
PT   Use of Sema7A polypeptides, polynucleotides, or activators or
PT   inhibitors, for manufacturing a medicament for treating autoimmune
PT   disorders, chronic obstructive pulmonary disease, inflammation,
PT   psoriasis and stroke -
XX
PS   Claim 5; Page 28-29; 36pp; English.
XX
CC   The present sequence is human Sema7A protein which
CC   belongs to semaphorin family. The Sema7A gene is located on human
CC   chromosome 15q22.3-q23. The Sema7A polypeptide and polynucleotide
CC   are useful for the manufacture of a medicament for treating autoimmune
CC   disorders, chronic obstructive pulmonary disease (COPD), inflammation,
CC   psoriasis, tissue repair, wounds, to enhance wound healing, irritable
CC   bowel syndrome, stroke, atherosclerosis, cancer or diseases where it is
CC   necessary to promote dendritic cell formation. The polypeptide is also
CC   useful in the diagnostic assays for detecting diseases associated with
CC   inappropriate levels or activities of Sema7A.
XX
SQ   Sequence   666 AA;
XX

Query Match            89.5%;  Score 1897;  DB 22;  Length 666;
Best Local Similarity  90.2%;
Matches  358;  Conservative   8;  Mismatches  27;  Indels   4;  Gaps   2;

Qy    1 MTPPPGCRAAPSAPRARVLSLPARFGLPLRLRLLLVFWVAAAASAQGHSRSGPRISAVWK-  59
        ||||||||||||||||||          |||||||||: :| |||||||| ||||||:||||
Db    1 MTPPPGCRAAPSAPRARVPGPPARLGLPLRLRLLLWAAAAASAQGHLRSGPRIFAVWKG     60

Qy   60 --GQDHVDFSQPEPHTVLFHEPGSFSVWVGGRGKVYHFNFPEPGKNASVRTVNIGSTKGSC 117
          ||||:|||.||.||||||||||||.|||||||||||:|.||||||||||||||||||||||
Db   61 HVGQDRVDFGQTEPHTVLFHEPGSSSVWVGGRGKVYLFDFPEPGKNASVRTVNIGSTKGSC 120

Qy  118 QDKQDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSL 177
        .||:||.||||||||||.|||.||||||:|||||||||:.||.|||||.|||||||||||
Db  121 LDKRDCENYITLLERRSEGLLACGTNARHPSCWNLVNGTVV-PLGEMRGYAPFSPDENSL  179

Qy  178 VLFEGDEVYSTIRKQEYNGKIPFRFRIRGESELYTSPDTVMQNPQFIKATIVHQDQAYDDK 237
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  180 VLFEGDEVYSTIRKQEYNGKIPFRFRIRGESELYTSPDTVMQNPQFIKATIVHQDQAYDDK 239

Qy  238 IYYFREDNPDKNPEAPLNVSRVAQLCRGDQDGGGESSLSVSKWNTFLKAMLVCSDAATNRN 297
        |||||||||||||||||||||||||||||||:   |||||||||||||||||||||||||:
Db  240 IYYFREDNPDKNPEAPLNVSRVAQLCRGDQQGESSLSVSKWNTFLKAMLVCSDAATNKN   299

Qy  298 FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFRTSSLKGYHMGLS 357
        ||||||||||||||||||||||||||||||||||||||||||||.:||||||||||.|.|
Db  300 FNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDKYVFRTSSLKGYHSSLP 359

Qy  358 NPRPGMCLPKKQPIPTETFQVADSHPEVAQRVEPMGP 394
        |||||.| || |||||||||||||:|||||||||||||
Db  360 NPRPGCKCLPDQQPIPTETFQVADRHPEVAQRVEPMGP 396
XX
```

```
PF   11-MAR-1999;  99JP-0065672.
XX
PR   11-MAR-1998;  98US-0041236.
XX
PA   (EXEL-) EXELIXIS PHARM INC.
XX
DR   WPI:  2000-109378/10.
DR   N-PSDB;  AAZ46841.
XX
PT   New semaphorin polypeptides, useful cell physiology modulators and
PT   immunogens -
XX
PS   Claim 1; Page 12-15; 57pp; Japanese.
XX
CC   The invention provided isolated human semaphorin K1 polypeptides. The
CC   polypeptides, or nucleic acids encoding them, can be used to modulate
CC   cellular physiology by modulating semaphorin K1 activity, e.g. semaphorin
CC   K1 polypeptide fragments or antisense nucleic acids can be used to
CC   enhance neurite outgrowth from damaged neurons. The polypeptides can also
CC   be used as immunogens, reagents for isolating other semaphorins, or as
CC   reagents for screening chemical libraries for lead pharmaceutical agents.
CC   The nucleic acids can also be used as probes and primers for diagnostic
CC   purposes. The present sequence represents the human semaphorin K1
CC   polypeptide.
XX
SQ   Sequence   634 AA;
XX

Query Match            82.8%;  Score 1755;  DB 21;  Length 634;
Best Local Similarity  90.4%;
Matches  330;  Conservative   8;  Mismatches  23;  Indels   4;  Gaps   2;

Qy   33 LLLVFWVAAAASAQGHSRSGPRISAVWK--GQDHVDFSQPEPHTVLFHEPGSFSVWVGGR  89
        ||| :| ||||||||| ||||||:||||  ||||:|||.||.||||||||||||.|||||
Db    1 LLLLWAAAAASAQGHLRSGPRIFAVWKGHVGQDRVDFGQTEPHTVLFHEPGSSSVWVGGR   60

Qy   90 GKVYHFNFPEPGKNASVRTVNIGSTKGSCQDKQDCGNYITLLERRGNGLLVCGTNARKPSC 149
        |||| |:.||||||||||||||||||||.||:||.||||||||||.|||.||||||:|||
Db   61 GKVYLFDFPEPGKNASVRTVNIGSTKGSCLDKRDCENYITLLERRSEGLLACGTNARHPSC 120

Qy  150 WNLVNDSVVMSLGEMKGYAPFSPDENSLVLFEGDEVYSTIRKQEYNGKIPFRFRIRGESE 209
        ||||||:. ||.|||||.||||||||||||||||||||||||||||||||||||||||||
Db  121 WNLVNGTVV--PLGEMRGYAPFSPDENSLVLFEGDEVYSTIRKQEYNGKIPFRFRIRGESE 179

Qy  210 LYTSDTVMQNPQFIKATIVHQDQAYDDKIYYFFREDNPDKNPEAPLNVSRVAQLCRGDQG 269
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  180 LYTSDTVMQNPQFIKATIVHQDQAYDDKIYYFFREDNPDKNPEAPLNVSRVAQLCRGDQG  239

Qy  270 GESSLSVSKWNTFLKAMLVCSDAATNRNFNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNY 329
        ||||||||||||||||||||||||||:|||||||||||||||||||||||||||||||||
Db  240 GESSLSVSKWNTFLKAMLVCSDAATNKNFNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNY  299

Qy  330 SAVCVYSLGDIDRVFRTSSLKGYHMGLSNPRPGMCLPKKQPIPTETFQVADSHPEVAQRV 389
        ||||||||||||.:||||||||||.|.|||||.| || |||||||||||||:||||||||
Db  300 SAVCVYSLGDIDKYVFRTSSLKGYHSSLPNPRPGCKCLPDQQPIPTETFQVADRHPEVAQRV 359

Qy  390 EPMGP 394
        |||||
Db  360 EPMGP 364
XX
```

```
RESULT 9
AAY56854
ID   AAY56854 standard; Protein; 634 AA.
XX
AC   AAY56854;
XX
DT   10-APR-2000  (first entry)
XX
DE   Human semaphorin K1 polypeptide.
XX
KW   Semaphorin K1; cellular physiology; neurite outgrowth; neuron; human;
KW   immunogen; pharmaceutical.
XX
OS   Homo sapiens.
XX
PN   JP11341988-A.
XX
PD   14-DEC-1999.
XX
```

```
RESULT 10
AAY28553
ID   AAY28553 standard; Peptide; 215 AA.
XX
AC   AAY28553;
XX
DT   19-OCT-1999  (first entry)
XX
DE   SBSEMVL polypeptide #2.
XX
KW   SBSEMVL; semaphorin; axon outgrowth; multidrug resistance; spinal injury;
KW   neurodegeneration; viral infection; cancer.
XX
```

OS   Homo sapiens.
XX
PN   WO9938885-A2.
XX
PD   05-AUG-1999.
XX
PF   25-JAN-1999;   99WO-EP00422.
XX
PR   30-JAN-1998;   98EP-0300694.
XX
PA   (SMIK ) SMITHKLINE BEECHAM PLC.
XX
PI   Hayes PD, Michalovich D;
XX
DR   WPI; 1999-479166/40.
DR   N-PSDB; AAZ00103.
XX
PT   Novel SBSEMVL molecules used for treating neurodegeneration, spinal
PT   injury, neuropathies, and neuromuscular, psychiatric, and
PT   inflammatory disorders, developmental malfunctions, cancer, immune
PT   system disorders and viral infections
XX
PS   Claim 17; Page 32; 34pp; English.
XX
CC   This sequence is human SBSEMVL polypeptide #2. SBSEMVL polypeptides are
CC   believed to be members of the Semaphorin family of polypeptides.
CC   Semaphorin polypeptides act as recognition molecules and are involved in
CC   axon outgrowth control. They are also likely to have a role in immune
CC   function and multidrug resistance. SBSEMVL polypeptides may be used for
CC   detecting diseases associated with inappropriate SBSEMVL activity or
CC   levels. SBSEMVL polypeptides and polynucleotides, agonists, antagonists
CC   and antibodies are used to treat neurodegeneration, spinal injury,
CC   neuropathies, and neuromuscular, psychiatric, and inflammatory disorders,
CC   developmental malfunctions, disorders of the immune system and
CC   viral infection. The polynucleotide is also useful as a source of primers
CC   and probes, and also for detecting the above diseases.
XX
SQ   Sequence 215 AA;

Query Match          44.7%;  Score 948.5;  DB 20;  Length 215;
Best Local Similarity 85.2%;
Matches  184;  Conservative 6;  Mismatches 23;  Indels 3;  Gaps 3;

```
Qy   60 GQDHVDFSQPEPHTVLFHEPGSFSVVWGGRGKVYHFNFPEGKNASVRTVNIGSTKGSCQD 119
         ||| ||||||||||||||||||||||||||||||:||||||||||||||||||||||||||
Db    1 GQDRVDFGGQTEPHTVLFHEPGSGSSSVVWGGRGKVYLFDFPEGKNASVRTVNIGSTKGSCLD 60

Qy  120 KQDCGNYITLLERRGNGLLVCGTNARKPSCWNLVNDSVVMSLGEMKGYAPFSPDEN-SLV 178
         ||||||||||||||||||| : ||| | :|||||||||||||||||||||||||||||||
Db   61 KRDCENYITLLERRSEGLLACGTNARHPSCWNLVN-ALWCHLGESGGYAPFSPDENVPWF 119

Qy  179 LFEGDEVYSTIRK-QEYNGKIPRFRRIRGESELYTSDTVMQNPQFIKATIVIHQDQAYDDK 237
         ||:||||||||||  : |||| ||||||||||||||||||||||||||||||||||||||
Db  120 CFEGDEVYSTIRKARNYWEDPRFRRIRGESELYTSDTVMQNPQFIKATIVIHQDQAYDDK 179

Qy  238 IIYFFREDNPDKNPEAPLNVSRVAQLCRGDQGGESS 273
         ||||||||||||||||||||||||||||||||||||
Db  180 IIYFFREDNPDKNPEAPLNVSRVAQLCRGDQGGESS 215
```

RESULT 11
AAY56855
ID   AAY56855 standard; Protein; 606 AA.
XX
AC   AAY56855;
XX
DT   10-APR-2000  (first entry)
XX
DE   Semaphorin K1 polypeptide related sequence.
XX
KW   Semaphorin K1; cellular physiology; neurite outgrowth; neuron; human;
KW   immunogen; pharmaceutical.
XX

OS   Unidentified.
XX
PN   JP11341988-A.
XX
PD   14-DEC-1999.
XX
PF   11-MAR-1999;   99JP-0065672.
XX
PR   11-MAR-1998;   98US-0041236.
XX
PA   (EXEL-) EXELIXIS PHARM INC.
XX
DR   WPI; 2000-109378/10.
DR   N-PSDB; AAZ46842.
XX
PT   New semaphorin polypeptides, useful cell physiology modulators and
PT   immunogens -
XX
PS   Disclosure; Page 17-20; 57pp; Japanese.
XX
CC   The invention provided isolated human semaphorin K1 polypeptides. The
CC   polypeptides, or nucleic acids encoding them, can be used to modulate
CC   cellular physiology by modulating semaphorin K1 activity, e.g. semaphorin
CC   K1 polypeptide fragments or antisense nucleic acids can be used to
CC   enhance neurite outgrowth from damaged neurons. The polypeptides can also
CC   be used as immunogens, reagents for isolating other semaphorins, or as
CC   reagents for screening chemical libraries for lead pharmaceutical agents.
CC   The nucleic acids can also be used as probes and primers for diagnostic
CC   purposes.
XX
SQ   Sequence 606 AA;

Query Match          42.5%;  Score 902;  DB 21;  Length 606;
Best Local Similarity 48.9%;  Pred. No. 2.7e-81;
Matches  179;  Conservative 54;  Mismatches 127;  Indels 6;  Gaps 4;

```
Qy   27 LPLRLRLLLVFWVAAAASAQCHSRSGPRISAVWK---GQDHVDFSQPEPHTVLFHEPGSFS 83
         : |||:|| |  ||||||||| ||: :||  |  |||||||||||||||
Db    4 LCVSIRLLMIL-SAITPAAKSRFIDKRPRLIVNLTDGFGQ-HRFFGPQEPHTVLFHSLNSSD 61

Qy   84 VVWGGRGKVYHFNFPEGKNASVRTVNIGSTKGSCQDKQDCGNYITLLERRGNGLLVCGTN 143
         ||||||| :||| :|| |||||:||||||:||||||| :| ||||||: |: ||||||||
Db   62 VYVGGNNTIYLFDFAHSSNASTALINITSTHNTHRLSSTCENFITLLHNQTDGLLACGTN 121

Qy  144 ARKPSCWNLVNDSVVMSLGEMKGYAPFSPDENSLVLFEGDEVYSTIRKQEYNGKIPRFRR 203
         :|||:|||  |   :||| ||||||||||  ||||:|  |||||||||:| |: | |||
Db  122 SQKPSCW-LINNLTTQFLGPKLGLAPFSPSSGNLVLFDQNDTYSTINLYKSLSGSHKFRR 180

Qy  204 IRGESELYTSDTVMQNPQFIKATIVIHQDQAYDDKIYYFFREDNPDKNPEAPLNVSRVAQL 263
         | | ||||||| || ||| | ||  :|::||||||||:||:|  |  |||||||||||
Db  181 IAGQVELYTSDTAMHRPQFVQGATAVHKNESYDDKIYFFFQENSHSDFKQFPHTVPRVGQV 240

Qy  264 CRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRNRLQDVFLLPDPSGQWRDTRVYGVF 323
         | |||||||||:| |:|||||| ||  ::|: :|||||: |: |   |:|| |||||
Db  241 CSSDQGGESSLSVYKWTTFLKARLACVDYDTGRIYNELQDIFIWQAPENSWEETLIYGLF 300

Qy  324 SNPWNYSAVCVYSLSGDIDRVFRTSSLKGYHMGLSNRPGMCLPKKQPIPTETFQVADSHP 383
         :||||::::|:|: :|:||:|::|: ||  ||||:| |: |::  :||||  :|
Db  301 LSPWNFSAVCVFTVKDIDHVFKTSKLKNYHHKLPTPRPGQCMKNHQHVPTETFQVADRYP 360

Qy  384 EVAQRV 389
         |||  |
Db  361 EVADPV 366
```

RESULT 12
AAB93440
ID   AAB93440 standard; Protein; 379 AA.
XX
AC   AAB93440;
XX
DT   26-JUN-2001  (first entry)
XX

DE   Human protein sequence SEQ ID NO:12678.
XX
KW   Human; primer; detection; diagnosis; antisense therapy; gene therapy.
XX
OS   Homo sapiens.
XX
PN   EP1074617-A2.
XX
PD   07-FEB-2001.
XX
PF   28-JUL-2000; 2000EP-0116126.
XX
PA   (HELI-) HELIX RES INST.
PI   Ota T, Isogai T, Nishikawa T, Hayashi K, Saito K, Yamamoto J;
PI   Ishii S, Sugiyama T, Wakamatsu A, Nagai K, Otsuki T;
XX
DR   WPI; 2001-318749/34.
XX
PT   Primer sets for synthesizing polynucleotides, particularly the 5602
PT   full-length cDNAs defined in the specification, and for the detection
PT   and/or diagnosis of the abnormality of the proteins encoded by the
PT   full-length cDNAs -
XX
PS   Claim 8; SEQ ID 12678; 2537pp + CD ROM; English.
XX
CC   The present invention describes primers sets for synthesising 5602
CC   full-length cDNAs defined in the specification. Where a primer set
CC   comprises: (a) an oligo-dT primer and an oligonucleotide complementary
CC   to the complementary strand of a polynucleotide which comprises one of
CC   the 5602 nucleotide sequences defined in the specification, where the
CC   oligonucleotide comprises at least 15 nucleotides; or (b) a combination
CC   of an oligonucleotide comprising a sequence complementary to the
CC   complementary strand of a polynucleotide which comprises a 5'-end
CC   sequence and an oligonucleotide comprising a sequence complementary to a
CC   polynucleotide which comprises a 3'-end sequence, where the
CC   oligonucleotide comprises at least 15 nucleotides and the combination of
CC   the 5'-end sequence/3'-end sequence is selected from those defined in
CC   the specification. The primer sets can be used in antisense therapy and
CC   in gene therapy. The primers are also useful for synthesising polynucleotides,
CC   particularly full-length cDNAs. The primers allow obtaining of the
CC   detection and/or diagnosis of the abnormality of the proteins encoded by
CC   the full-length cDNAs. The primers allow obtaining of the full-length
CC   cDNAs easily without any specialised methods. AAH03166 to AAH13628 and
CC   AAH13633 to AAH18742 represent human cDNA sequences; AAB92446 to
CC   AAB95893 represent human amino acid sequences; and AAH13629 to AAH13632
CC   represent oligonucleotides, all of which are used in the exemplification
CC   of the present invention.
XX
SQ   Sequence 379 AA;

Query Match             26.0%;  Score 552;  DB 22;  Length 379;
Best Local Similarity   91.7%;
Matches  100;  Conservative    3;  Mismatches    6;  Indels    0;  Gaps    0;

```
Qy   286 MLVCSDAATNRNFNRLQDVFLLPDPSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDRVFR 345
         ||||||||| ||||||||||||||| ||||||||||||||||||||||||||||||| |||
Db     1 MLVCSDAATNKNFNRLQDVFLLPDDSGQWRDTRVYGVFSNPWNYSAVCVYSLGDIDKVFR 60

Qy   346 TSSLKGYHMGLSNPRPGMCLPKPKQPIPTETFQVADSHPEVAQRVEPMGP 394
         |||||||  | ||| || |||   |||||||||||| ||||||||||||||
Db    61 TSSLKGYHSSLPNPRPGKCLPDQQPIPTETFQVADRHPEVAQRVEPMGP 109
```

XX
AC   ABB97964;
XX
DT   06-SEP-2002  (first entry)
XX
DE   Human protein sequence #31.
XX
KW   Human; brain; tonsill; hippocampus; foetal brain; diagnosis.
XX
OS   Homo sapiens.
XX
PN   WO200252005-A1.
XX
PD   04-JUL-2002.
XX
PF   20-DEC-2001; 2001WO-JP11217.
XX
PR   22-DEC-2000; 2000JP-0389742.
XX
PA   (KAZU-) KAZUSA DNA RES INST FOUND.
PA   (CELE-) CELESTAR LEXICO-SCI LTD.
PI   Ohara O, Nagase T, Nakajima D;
XX
DR   WPI; 2002-5007762/53.
DR   N-PSDB; ABN83984.
XX
PT   Genes and their expression products cloned from human cDNA libraries
PT   for treatment and diagnosis of diseases associated with their
PT   expression -
XX
PS   Claim 1(a); Page 126-132; 238pp; Japanese.
XX
CC   The invention relates to DNA encoding polypeptides directly cloned from
CC   cDNA libraries originating in adult whole brain, human tonsil, human
CC   adult hippocampus and human foetal whole brain. Polypeptides and
CC   polynucleotides of the invention may be used in the investigation of
CC   differential expression of the DNA sequences in normal subjects and
CC   disease patients. They may also be used in the production of antibodies,
CC   oligonucleotide probes and DNA chips for diagnosis and identification
CC   of drugs for treatment of diseases with which the DNA sequences are
CC   associated. The sequences given in records ABB97934-ABB97964 represent
CC   human proteins of the invention.
XX
SQ   Sequence 893 AA;

Query Match             18.7%;  Score 397;  DB 23;  Length 893;
Best Local Similarity   30.1%;
Matches  129;  Conservative   54;  Mismatches  167;  Indels   78;  Gaps   16;

```
Qy     3 PPPGRAAPSAPRARVL------------------SLPARFGLPLRLLLVF------WVAA 41
         || | :                            :||||||||||||| :    |||:
Db    42 PPEPEPRDTVAPALRMLRTAMGLRSWLAAPWGALPPPRPPLLLLLLLLLQPPPTWALS 101

Qy    42 ASAQGHSRSGPRISAVWKGQDHVDFSQPEP-------HTVLFHEPGSFSVWVGGRGKVYHFN 96
         |||| :                         :||| | ::|| |||| |||  ::
Db   102 -----------PRIS-LPLGSEERPFLRFEAEHISNYTALLLSRDGRTLYVGAREALFALS 150

Qy    97 -----FPEGKNASVRTVNIGSTKGSCGSCQDK------QDCGNYI-TLLERRGNGLLVCGTNAR 145
              : :||::||     ||| ||| | | ||| | ::|
Db   151 SNLSFLPGGEYQELLWGADAAERKQQCSFKGKDPQDRDCQNYIKILLPLSGSHLFTCGTAAF 210

Qy   146 KPSCW--NLVNDSVV-------MSLGEMKGYAPFSPDENSLVLFEGDEVYSTIRKQEYNGK 197
         | ||   :|:  | :      :: |  |  : | ||| |:| ||  : | ||
Db   211 SPMCTYINMENFTLARDEKGNVLLEDGKGRCPFDPNFKSTALVVDGELY-TGTVSSFGGN 269

Qy   198 IPRFRRIRGESELYTSDTV--MQNPQFIKATIVHQD----QAYDDKIYYFFREDNPDKNP 251
         ||:| | | : | : ::|:  |  |: ::|   | |||||:|| ||||
Db   270 DPAISRSQSLRPTKTESSLNWLQDPAFVASAVIPESLGSLQGDDDKIYFFSETGQEFEF 329

Qy   252 EAPLNVSRVAQLCRGDQGGESSLSVSKWNTFLKAMLVCSDAATNRNFNRLQDVFLLPDPS 311
         |: |||:|  |  ::|: | | ||: ||  | ||  |||||||||||||||||||||||
Db   330 FENTIVSRIARICKGDEGGERVLQ-QRWTSFLKAQLLCSRPDDGFPPNVLQDVFTLSPSP 388
```

RESULT 13
ABB97964
ID   ABB97964 standard; Protein; 893 AA.

```
Qy    312 GQWRDRTRVYGVFSNPWNY------SAVCVYSLGDIDRVF--------RTSSLKGYHMGLS 357
          ||||                   |||||::|             ||||||
Db    389 QDWRDTLFYGVFTSQWHRGTTEGSAVCVFTMKDVQRVFSGLLYKEVNRETQQWYTVHPVP 448
                                                         :

Qy    358 NPRPGMCL 365
          |||||||:
Db    449 TPRPGACI 456
```

```
RESULT 14
AAW17658
ID    AAW17658 standard; protein; 861 AA.
XX
AC    AAW17658;
XX
DT    24-JUL-1997 (first entry)
XX
DE    Mouse CD100 antigen.
XX
KW    CD100 antigen; semaphorin; leukocyte; B cell; T cell; lymphocyte;
KW    vaccine.
XX
OS    Mus sp.
XX
FH    Key             Location/Qualifiers
FT    Peptide         1..41
FT                    /label= Sig_peptide
FT    Protein         42..861
FT                    /label= Mat_protein
FT    Domain          42..553
FT                    /label= Semaphorin_domain
FT    Domain          554..630
FT                    /label= Ig-like_domain
FT    Domain          631..732
FT                    /label= Stalk_domain
FT    Domain          734..752
FT                    /label= Transmembrane_domain
FT    Domain          753..861
FT                    /label= Cytoplasmic_domain
FT    Modified-site   807..814
FT                    /label= phosphorylation
FT                    /note= "putative tyrosine phosphorylation site"
XX
PN    WO9717368-A1.
XX
PD    15-MAY-1997.
XX
PF    12-NOV-1996; 96WO-US18645.
XX
PR    09-NOV-1995; 95US-0556422.
XX
PA    (DAND ) DANA FARBER CANCER INST.
XX
PI    Boussiotis V, Freeman GJ, Hall KT, Nadler LM, Schultze JL;
XX
DR    WPI; 1997-280982/25.
DR    N-PSDB; AAT60666.
XX
PT    Nucleic acid molecule encoding CD100 antigen - which stimulates
PT    leukocyte response, e.g. B cell aggregation, differentiation,
PT    survival and T cell proliferation
XX
PS    Example 8; Page 86-89; 135pp; English.
XX
CC    Mouse CD100 antigen (AAW17657) is a novel leukocyte semaphorin-like
CC    protein that stimulates a leukocyte response, including B cell
CC    aggregation, B cell differentiation, B cell survival and/or T cell
CC    proliferation. Its amino acid sequence was deduced from a cDNA
CC    clone (AAT60666) isolated from murine T cells. Human CD100 antigen
CC    (AAW17657) has also been identified. CD100 polypeptides and fusion
CC    proteins, nucleic acids, and host cells expressing CD100 can be
CC    utilised in diagnostic and therapeutic methods involving modulation
CC    of B and T cell responses, neuron axonal growth and immune cell-
CC    nerve cell interaction.
XX
SQ    Sequence  861 AA;

Query Match             18.4%;  Score 389.5;  DB 18;  Length 861;
Best Local Similarity   29.3%;  Pred. No. 1.5e-29;
Matches  128; Conservative  59; Mismatches 151; Indels  99; Gaps  20;

Qy     24 RFGLPLR---LRLILVFWWAAASAQGHSRSGPRISAVWKGQDHVDFSQPEPHTVLFHEPG 80
          |:||     |:  |:  |||:  :| |   ||| |||    ||||    || |||:||
Db      2 RMCAPVRGLFLALVVVLRTAVAFA-----PVPRLT--WE------HGEVGLVQFHKPG 46

Qy     81 SF------------SVWVGGRGKYVHFNFPEGKNASVRTVNIG------------STKGS 116
          ::||| |  :|                                      ::|
Db     47 IFNYSALLMSEDKDTFLYVGAREAVF---------AVNALNISEKQHEYYWKVSEDKKSK 96

Qy    117 CQDK------QDCGNYITLLE-RRGNGLLVCGTNARKPSC--WNLVNDSVVMSLGEMKGYA 168
          |||       |:|:|||  |:  ||:|| ||||  |:     ||  :|: ||| |:|
Db     97 CAEKGKSKQTECLNYIRVLQPLSSTSLYVCGTNAFQPTCDHLNLTSFKFLGKSEDGKGRC 156

Qy    169 PFSPDENSLVLFEGDEVYSTIRKQEYN--GKIPRFRRIRGESELYTSDTV--MQNPQFIK 224
          ||| |   || |:| |  | |:    |   |:|  |||  |::| |||       | || |
Db    157 PFDPAHSYTSVMVGGELYS---GTSYNFLGSEPIISRNSSHSPLRTEYAIPWLNEPSFVP 213

Qy    225 ATIVHQD-----QAYDDKIYYFFREDNPDKNPEAPLNVSRVAQLCRGDQGGESSLSVSKWN 280
          |||  :     |:| ||||||: | |:::|:|  ||||:| | ||| || |||
Db    214 ADVIQKSPDGPEGEDDKVFFFTEVSEYEFVFRKLMIPRVARVCKGDQGGLRTLQ--KKWT 272

Qy    281 TFLKAMLVCSDAATNRNFNRLQDVFLLPDPSGQWRDTRVYGVFS---NPWNYSAVCVYSL 337
          :||| |:|||   |  |:  |:|| ||||  || ||||||||:     ||||:|||: |
Db    273 SFLKARLICSKPDSGLVFNILQDVFVLRAPG--LKEPVFYAVFTPQLNNVGLSAVCAYTL 330

Qy    338 GDIDRVF----------RTSSLK--GYHMGLSNPRPGMCLPKKQ------PIPTET 375
          ||:||||           |||:|   |: ||| |||:|||| |        |||||
Db    331 ATVEAVFSRGKYMQSATVEQSHTKWVRYNGPVPTPRPGACIDSEARAANYTSSLNLPDKT 390

Qy    376 FQVADSHPEVAQRVEPM 392
          |:| |  | ||| |
Db    391 LQFVKDHPLMDDSYTPI 407
```

```
RESULT 15
AAW58540
ID    AAW58540 standard; protein; 861 AA.
XX
AC    AAW58540;
XX
DT    02-SEP-1998 (first entry)
XX
DE    Human semaphorin.
XX
KW    Human; semaphorin; diagnosis; nervous disease; immune disease;
KW    nerve extension inhibiting activity.
XX
OS    Homo sapiens.
XX
PN    JP10155490-A.
XX
PD    16-JUN-1998.
XX
PF    27-NOV-1996; 96JP-0332900.
XX
PR    27-NOV-1996; 96JP-0332900.
XX
PA    (SUMU ) SUMITOMO SEIYAKU KK.
XX
DR    WPI; 1998-391044/34.
DR    N-PSDB; AAV31121.
XX
PT    New human semafolin gene - useful in the diagnosis of nervous system
PT    and immune disorders
XX
```

```
PS   Claim 1; Page 10-12; 15pp; Japanese.
XX
CC   The present sequence represents human semaphorin (translated from the
CC   Japanese specification as semafolin). Semaphorin has nerve extension
CC   inhibiting activity. The semaphorin gene is useful for the diagnosis,
CC   treatment and researches on nervous diseases and immune diseases.
XX
SQ   Sequence    861 AA;

Query Match            18.4%;    Score 389.5;  DB 19;   Length 861;
Best Local Similarity   29.3%;   Pred. No. 1.5e-29;
Matches  128;  Conservative   59;  Mismatches 151;   Indels  99;   Gaps  20;

Qy     24 RFGLPLR----LRLLLVFWVAAASAOGHSRSGPRISAVWKGQDHVDFSQPEPHTVLFHEPG 80
          |     |     :||| |||| | |  |  |  || ||  |  :  |    | ||:|||||
Db      2 RMCAPVRGLFLALVVVLRTAVAFA----PVPRLT--WE-------HGEVGLVQPFHKPG 46

Qy     81 SF-------------SVWVGGRGKVYHFNFPEGKNASVRTVNIG------------STKGS 116
          :|          :::||  |  || |  |     |      ||                |
Db     47 IFNYSALLMSEDKIDTLYVGAREAVF-----------AVNALNISEKQHEVYWKVSEDKKSK 96

Qy    117 CQDK----QDCGNYITLLF-RRGNLLVGTNARKPSC--WNLVNDSVVMSLGEMKGYA 168
          |:|       ||  ||    |   || :||| |:|     || | : | || | ||
Db     97 CAEKGKSKQTECLNYIRVLQPLSSTSLYVCGTNAFQPTCDHLNLTSFKFLGKSEDGKGRC 156

Qy    169 PFSPDENSLVLFEGDEVYSTIRKQEYN--GKIPRFRRIRGESELYTSDIV--MQNPQFIK 224
          ||   |   |  |    |   |  |      |           |      | |   | |
Db    157 PFDPAHSYTSVMVGGELYS---GTSYNFLGSEPIISRNSSHSPLRTEYAIPWLNEPSFVF 213

Qy    225 ATIVHQD----QAYDDKIYYFFREDNPDKNPEAPLNVSRVAQLCRGDQOGGESSLSVSKWN 280
          || :|        ||||| | |  ||    | | | :| | || ||  ||   | | |
Db    214 ADVIQKSPDGPEGEDDKVYFFFTEVSVEYEFVFKLMIPRVARVCKGDQQGGLRTLQ-KKWT 272

Qy    281 TFLKAMLVCSDAATNRNFNRLQDVFLLPDPSGQWRDTRVYGVFS---NPWNYSAVCVYSL 337
          :|||| |  | | | || |  | ||  |  |    | | |          |  :|| |:|
Db    273 SFLKARLICSKPDSGLVFNILQDVFVLRAPG--LKEPVFYAVFTPQLNNVGLSAVCAYTL 330

Qy    338 GDIDRVF----------RTSSLK--GYHMGLSNPRPGMCLPKKQ---------PIPTET 375
          | |  :          | |   : |  |     :  |  ||           || ||
Db    331 ATVEAVFSRGKYMQSATVEQSHTKWVRYNGPVPTPRPGACIDSEARAANYTSSLNLPDKT 390

Qy    376 FQVADSHPEVAQRVEPM 392
          | || ||| |  ||
Db    391 LQFVKDHPLMDDSVTPI 407
```

Search completed: March 14, 2003, 09:25:32
Job time : 29.9038 secs